

Appl. No. : 10/674,651  
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### AMENDMENTS TO THE CLAIMS

Claims 1-42 were pending prior to entry of these amendments. Please cancel Claims 2-14, 17-32, and 35-42. Please add new Claims 43-49.

1. (Original) A liquid source chemical vaporizer for vaporizing liquid source chemical and delivering vapor phase chemical, comprising:

a container configured to hold liquid source chemical up to a liquid fill level and to additionally define an inner gas volume;

a carrier gas inlet communicating carrier gas into the container;

a gas outlet communicating with the inner gas volume of the container; and

a porous element positioned to be in contact with liquid source chemical and in contact with the inner gas volume within the container.

2.-14. (Canceled)

15. (Original) The source chemical vaporizer of Claim 1, wherein the carrier gas inlet comprises a bubbler tube extending through the inner gas volume into the liquid source chemical, the porous element being the bubbler tube, whereby the inner gas volume is above the liquid fill level and communicates gas through pores in the bubbler tube.

16. (Currently amended) The source chemical vaporizer of Claim 15, wherein pores in the bubbler tube are sized to produce a flow rate to the inner gas space above the liquid fill level, under normal operation, of ~~less~~ greater than about 50 % of a flow rate of carrier gas through a bottom of the bubbler tube producing bubbles within the liquid source chemical.

17.-32. (Canceled)

33. (Original) A liquid source bubbler system, comprising:

a container configured to hold liquid source chemicals;

a bubbler tube communicating with an inert gas source, the bubbler tube extending into an opening within a liquid storage space;

a gas outlet communicating with an inner gas space defined within the container above the liquid storage space; and

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a by-pass conductance route, configured to release excess gas pressure from within the inner gas space to the gas inlet, thereby inhibiting liquid flow up the bubbler tube.

34. (Original) The system of Claim 33, wherein the by-pass conductance path comprises a plurality of openings in a wall of the bubbler tube, at least some of the openings opening from the bubbler tube to the inner gas space.

35.-42. (Canceled)

43. (New) The source chemical vaporizer of Claim 1, wherein the material of the porous element is microporous.

44. (New) The source chemical vaporizer of Claim 1, wherein the porous element is a porous feeding tube.

45. (New) The source chemical vaporizer of Claim 44, wherein the porous feeding tube is configured such that hydrostatic pressure of a liquid column within the porous feeding tube is about equal to a pressure difference across walls of the porous feeding tube.

46. (New) The source chemical vaporizer of Claim 44, wherein pores of the porous feeding tube serve as a by-pass conductance for releasing overpressure in the inner gas volume.

47. (New) The source chemical vaporizer of Claim 1, wherein the porous element has a porosity between about 30% and 70%.

48. (New) The source chemical vaporizer of Claim 1, wherein the porous element has a porosity between about 40% and 60%.

49. (New) The source chemical vaporizer of Claim 1, wherein the porous element defines the gas flow path within a porous feeding tube having a conductance that is a linear function of a length of the tube.